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a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>		

# Managing Environmental Liabilities using Full Lifecycle Accounting



ENTERPRISE SOFTWARE  
FOR ENVIRONMENTAL  
BUSINESS MANAGEMENT





- **Lynn R. Hogg, Vice President  
Enfos, Inc.**

More than 25 years of Environmental Compliance, Enterprise Business Process and Document Management executive management experience.



A frequent speaker NAEM and other national environmental conferences and symposium .



# OUR AGENDA TODAY

Discuss strategies for:

- comprehensive Environmental Liability (EL)
- Risk Management
- standard Asset Retirement Obligation (ARO) accounting
- and Spend Management

Show how to ease the DoD's EL reporting burden

Increase visibility and facilitate effective coordination across the various environmental, property management, and accounting communities



## History, Common Issues and Challenges



# BACKGROUND

Federal accounting standards define environmental cleanup costs as *the cost of removing, containing, and/or disposing of hazardous waste at associated property, plant, and equipment*

Cleanup may include:

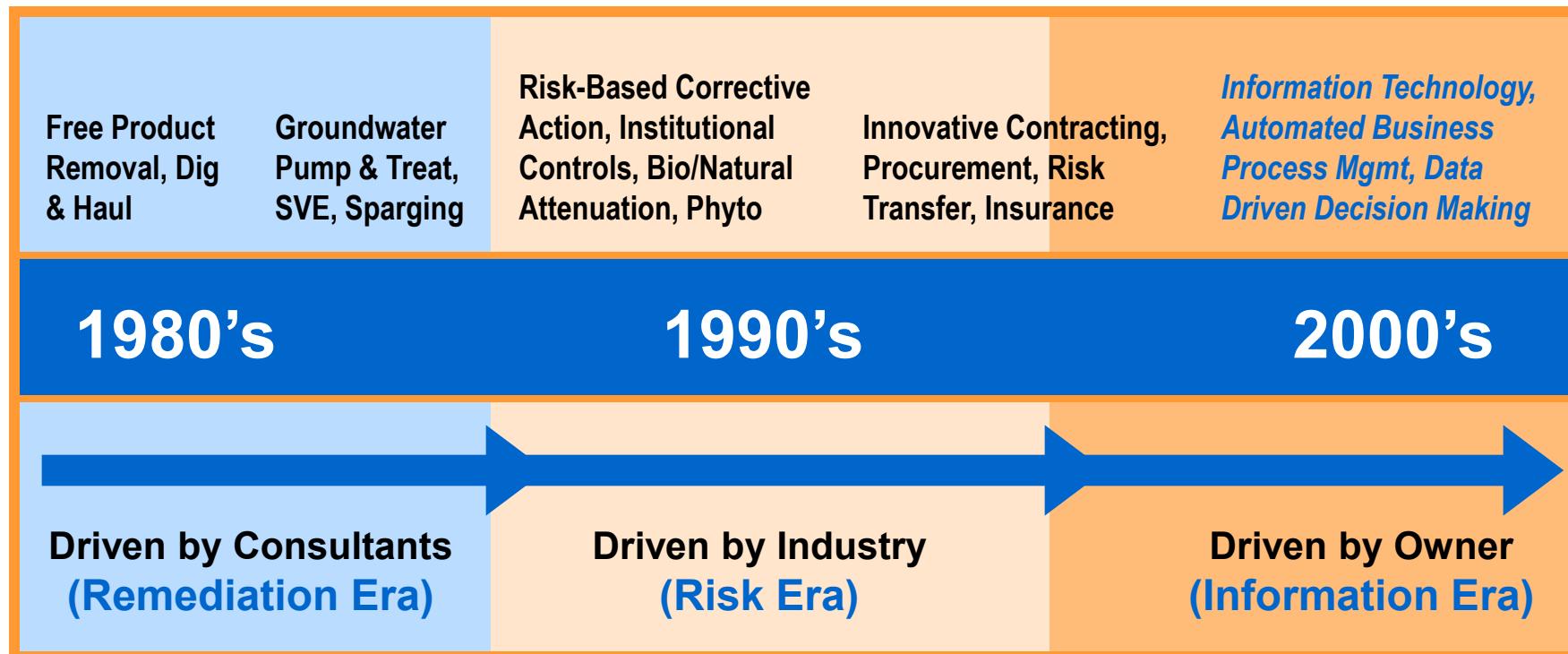
- decontamination
- decommissioning
- site restoration
- site monitoring
- closure
- and post-closure costs

The CFO Act, a mandate for Federal Financial Management Reform, requires federal agencies to reconcile financial statement reporting with budget submissions

This means managing environmental liabilities as part of the lifecycle business process in order to support program management and business decisions



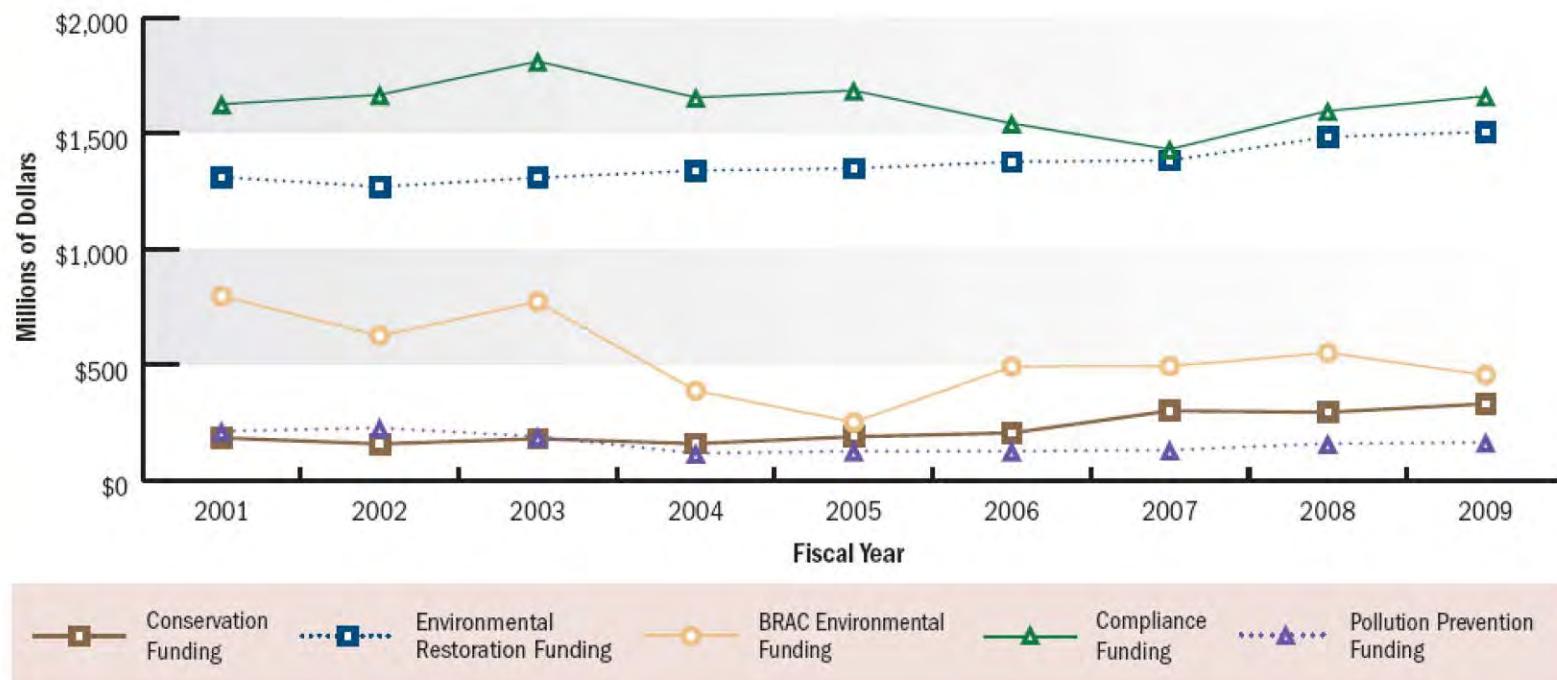
# REMEDIATION INDUSTRY PROGRESSION





# DoD REPORT TO CONGRESS 2008

Figure 1 Defense Environmental Funding Trends

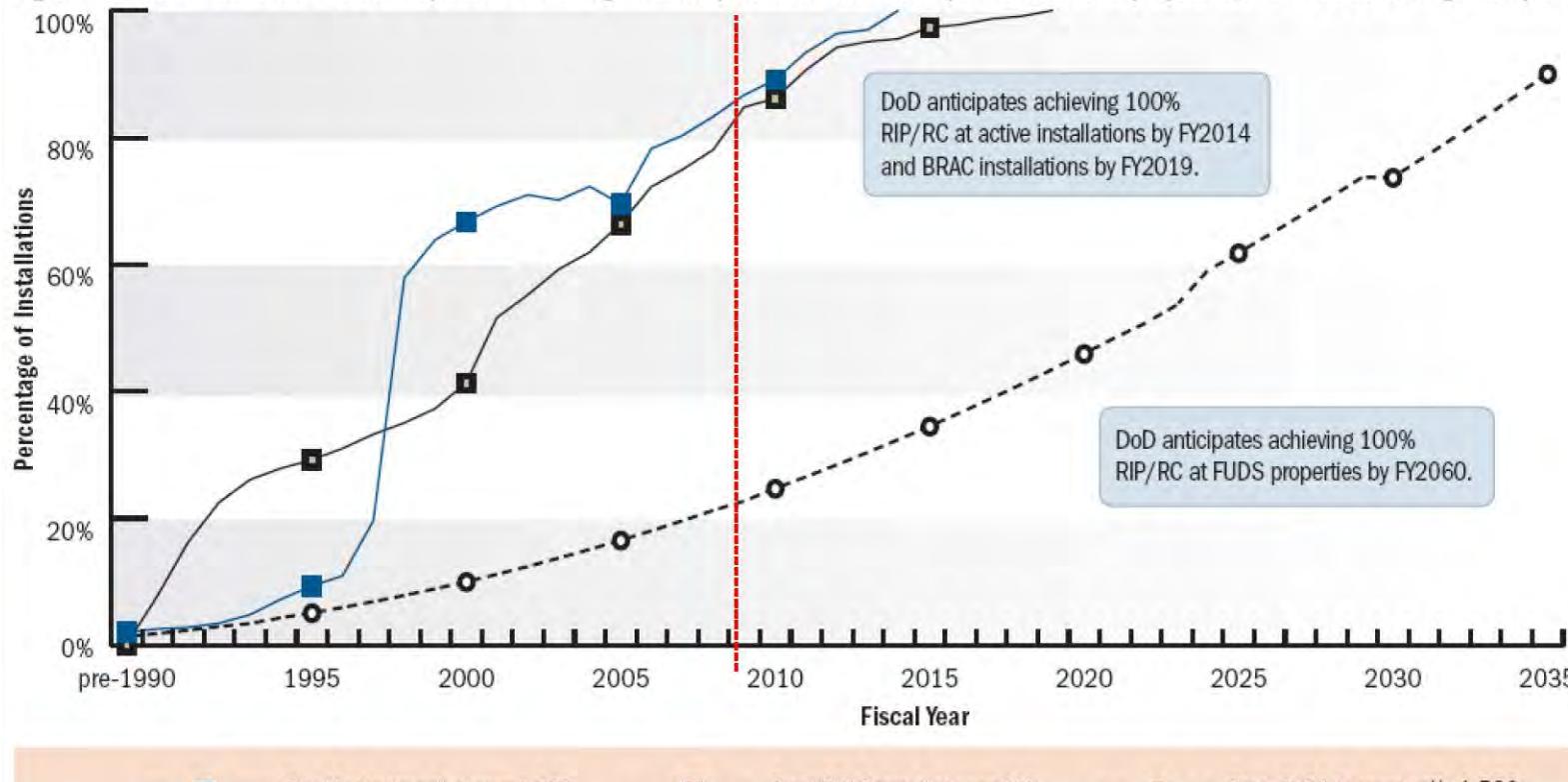




# SIGNIFICANT INCREASES IN EL SPEND ARE PLANNED

Restoration within Defense Environmental Restoration Program (DERP) are funded from the Environmental Restoration (ER) and Base Realignment and Closure (BRAC) accounts. ER account funds DERP environmental restoration activities at active military installations and formerly used defense sites (FUDS)

Figure 21 Installations and FUDS Properties Achieving Final RIP/RC at all IRP Sites\* (Cumulative and projected, Pre-FY1990 through completion)

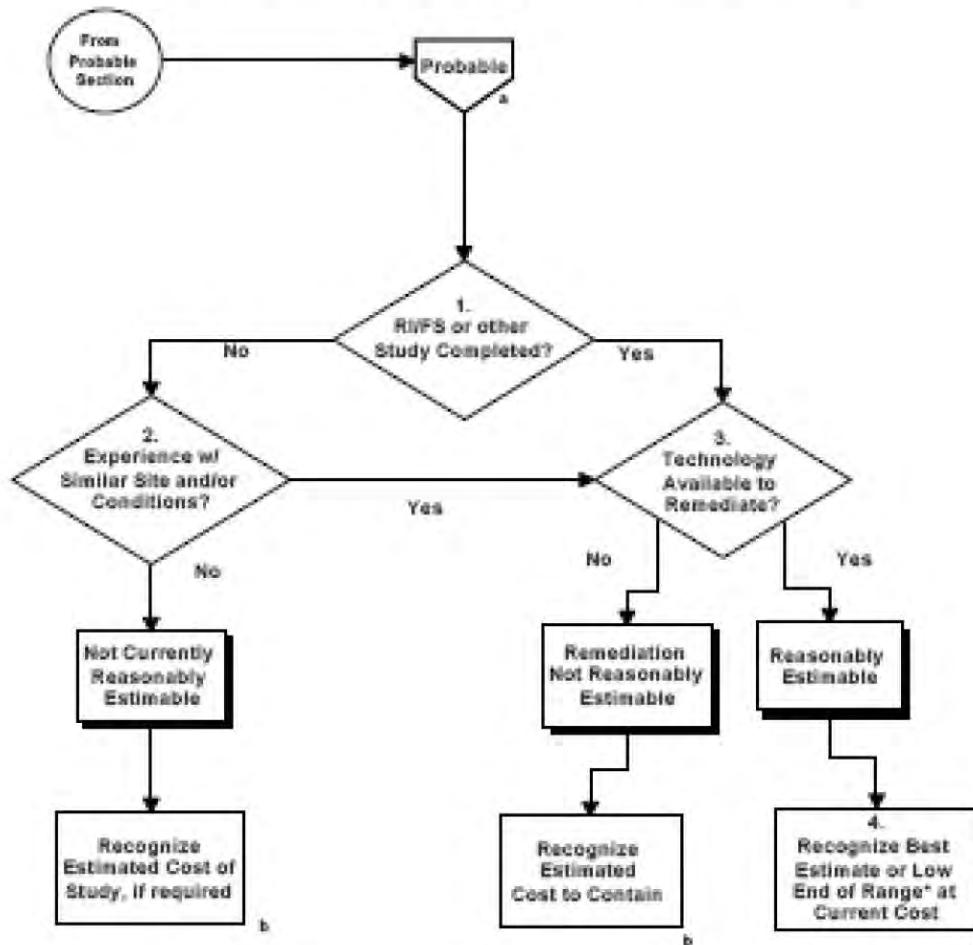


Remedies In Place (RIP), Response Complete (RC) although may be in the long-term management (LTM) phase.



# PREVIOUS “REASONABLY ESTIMATABLE” MODEL

Diagram 2.1: Determination and Quantification of Reasonably Estimable Environmental Liabilities



\*Low end of range could be containment, if containment is chosen as the option to be pursued.

a. Probable refers to track 1 (government related) which is found in Section 1. Track 2 (government acknowledged) is not applicable.

b. With all tracks, see SFAS #6 par. 107-111 and SFAS #5 par. 49-52 for disclosure requirements.



# EMERGING “FAIR VALUE MEASUREMENT”

Fair value measurement, also known as “*mark-to-market*”, has emerged as the favored measurement principle under U.S. and international financial reporting standards over the past decade.

In recent years, the FASB has adopted numerous standards requiring fair value measurement of liabilities and impairments, including:

## Year Pronouncement History

2007 Statement 141R, Business Combinations

2006 Statement 157, Fair Value Measurements

2005 Interpretation 47, Accounting for Conditional Asset Retirement Obligations

2002 Statement 146, Accounting for Costs Associated with Exit or Disposal Activities

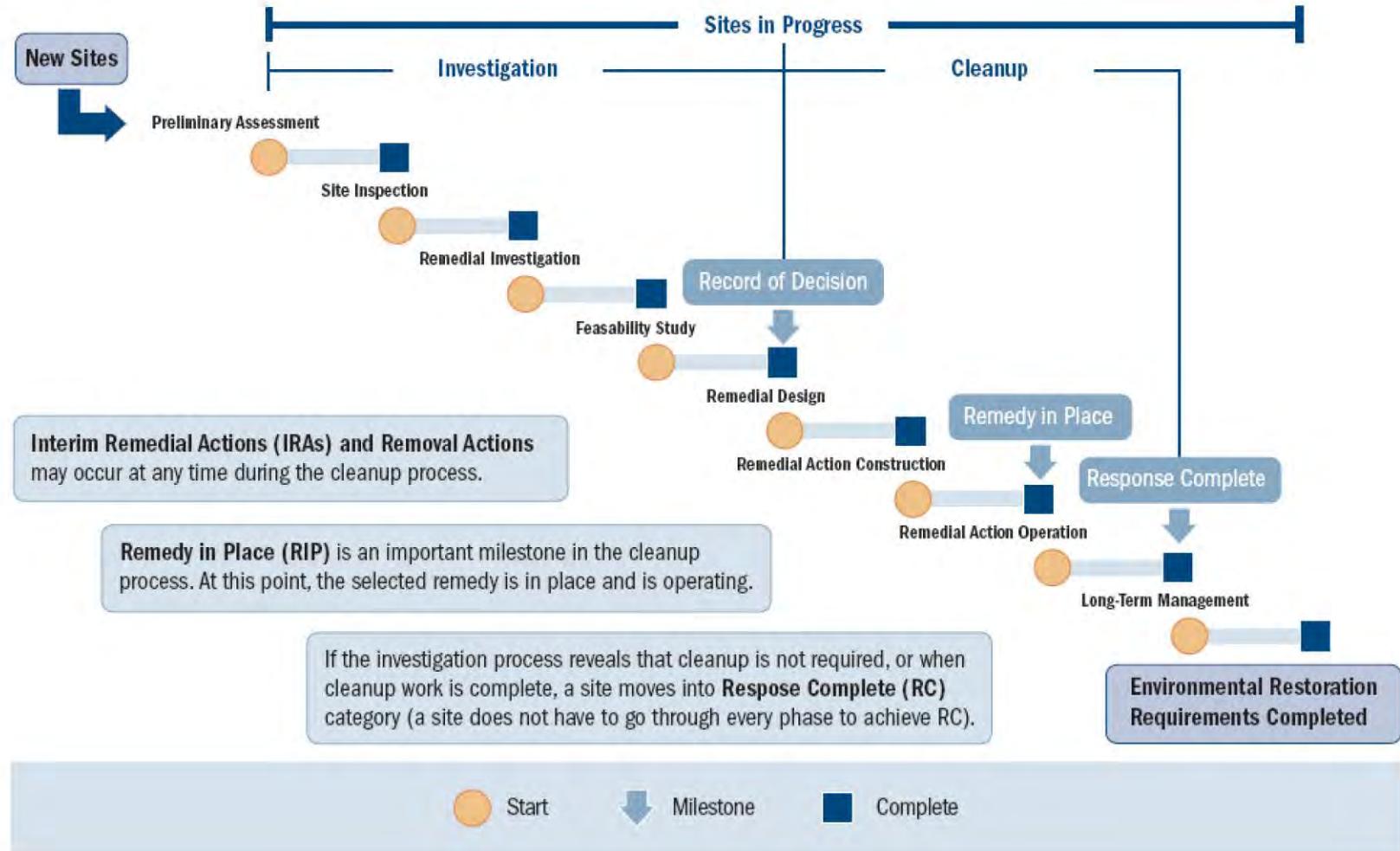
2001 Statement 144, Accounting for the Impairment or Disposal of Long-Lived Assets

2001 Statement 143, Accounting for Asset Retirement Obligations (AROs)



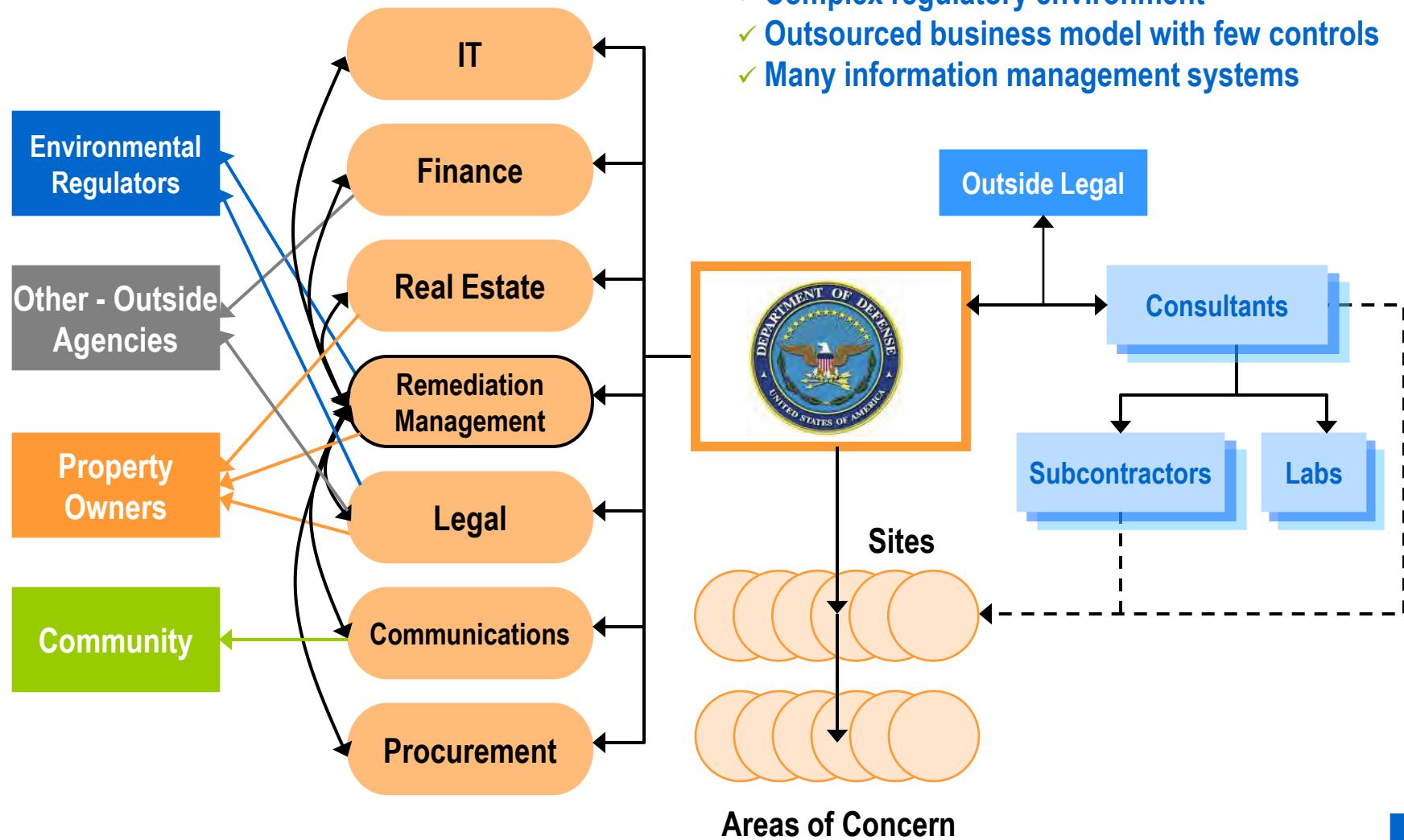
# ENVIRONMENT RESTORATION PHASES AND MILESTONES

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)





# CURRENT MANUAL PROCESSES

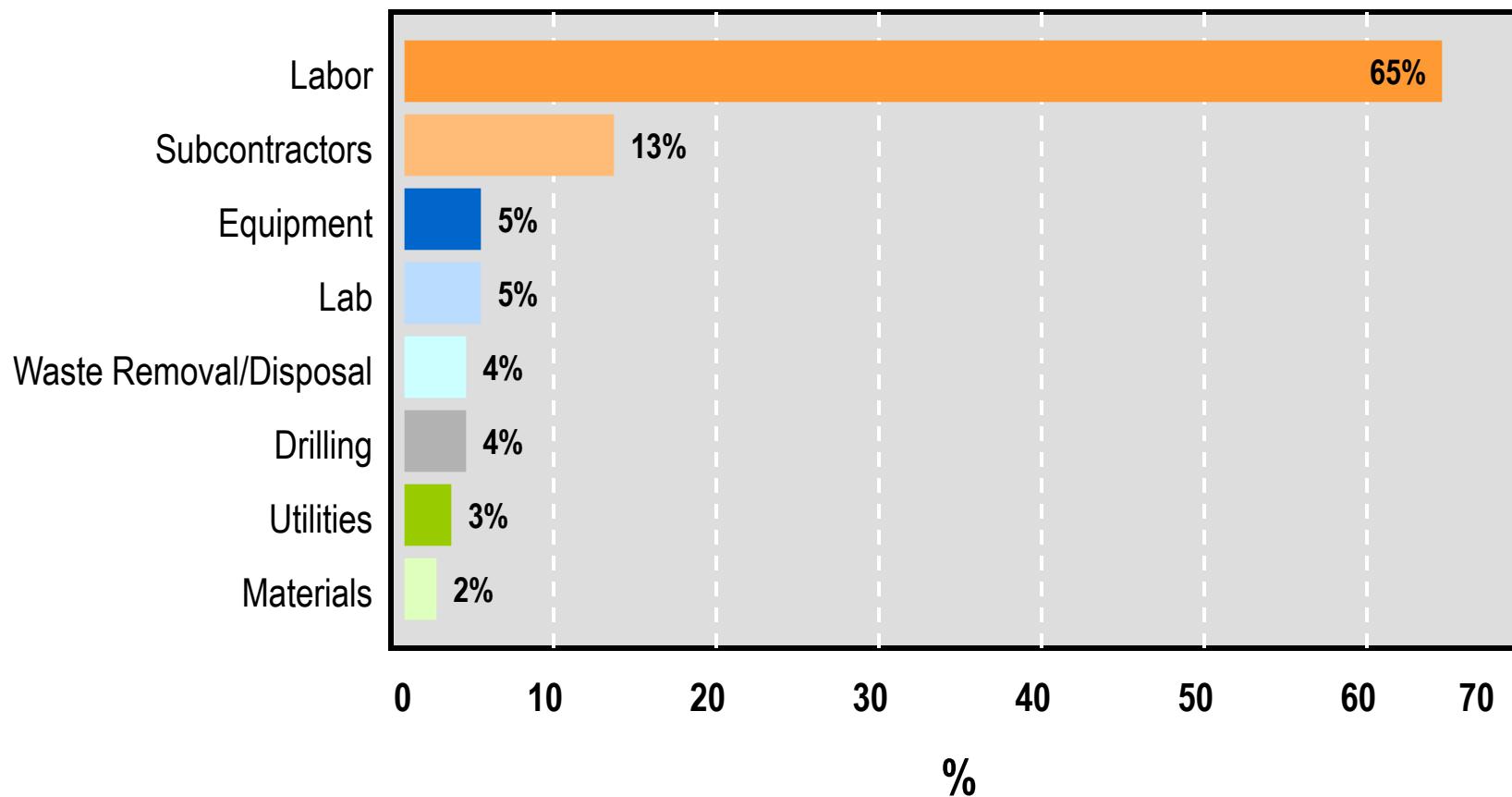




# REMEDIATION IS LABOR INTENSIVE

Information Technology Improves Labor Efficiency which Lowers Cost

Average Annual Spending Distribution by Cost Element





# WHAT IS THE GAP?



Environmental Liabilities Recognition, Valuation, and Reporting Requirements Document

The Department is unable to consistently provide data sufficient for an auditor to form an opinion regarding EL estimates.

Underlying factors are

- lack of comprehensive enterprise-wide business processes and business rules
- use of dissimilar and non-interoperable (IT) management systems
- lack component inventories of ELs reconciled with PP&E asset records
- lack guidance on what constitutes - how to report - an EL that is not part of DERP

As a result,

*the Department is unable to accurately and consistently account for DoD environmental liabilities, in accordance with generally-accepted accounting standards on the annual DoD financial statement.*



# DATA – BUSINESS PROCESS GAPS



- Data is inadequate or not available to:
  - determine accuracy and reliability of environmental liability cost estimates
  - determine completeness or materiality of cost estimates
- Inadequate or non-existent audit trails prevent validation of estimates
- Information is inadequate or non-existent to ascertain estimator, reviewer, approver credentials
- Inadequate or non-existent common core data inhibits data sharing
- Inconsistent environmental liabilities recognition, valuation, and reporting methods
- Inadequate or inconsistent business processes result in:
  - data variability
  - inhibit proper management controls
  - result in enterprise data interpretation problems



# INFORMATION TECHNOLOGY GAPS



Environmental Liabilities Recognition, Valuation, and Reporting Requirements Document

- Functionally fragmented
- Independent IT systems result in insufficient management capabilities
- Parallel and duplicative IT capabilities result in limited agility and interoperability
- Limited or lack of data exchange or communication among and between IT systems



# MADE GREAT STRIDES ... SIGNIFICANT IMPROVEMENTS STILL NEEDED



- Institute consistent business processes, business rules, and common EL related data
- Comply with generally accepted accounting standards and DoD accounting policy, and report consistent environmental liability values on its financial statement
- DoD's reengineered business processes (BEA & BEI) will enable a joint, interoperable capability to recognize, value, and report environmental liabilities sufficient to achieve an unqualified audit opinion
- Key tenet of successful financial reporting = ability to audit the data
- Eliminate environmental liabilities as a systemic material weakness
- Enable DoD Components to compile fully-supported, complete, and accurate EL information reconciled with PP&E asset records

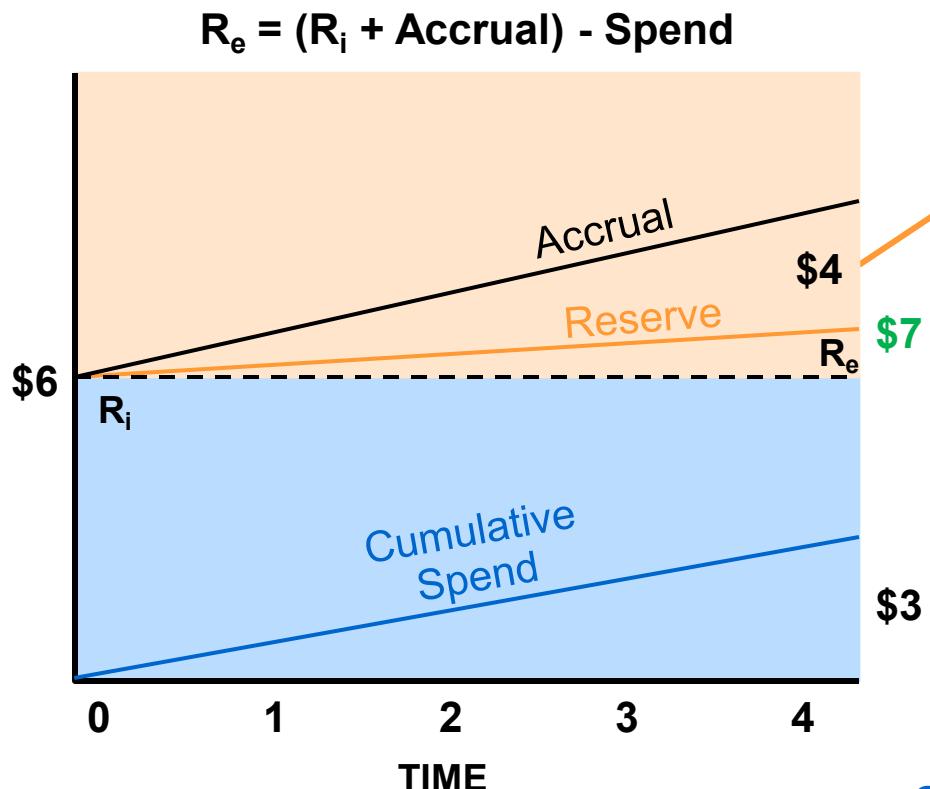


# CHALLENGES (you're not alone)

- Reserve balances are not decreasing at the expected rate (or not decreasing at all)
- Accruals from new liabilities and changes to estimates are increasing at a higher rate than annual spending
- Ineffective use of cash expenditures
- Strategies, processes, systems, and people are not aligned for success



# RESERVE PERFORMANCE OVER TIME



Additions to Reserve due to changed estimates, new liabilities, etc.

## EXAMPLE:

Cash Utilization Metric equals -0.33

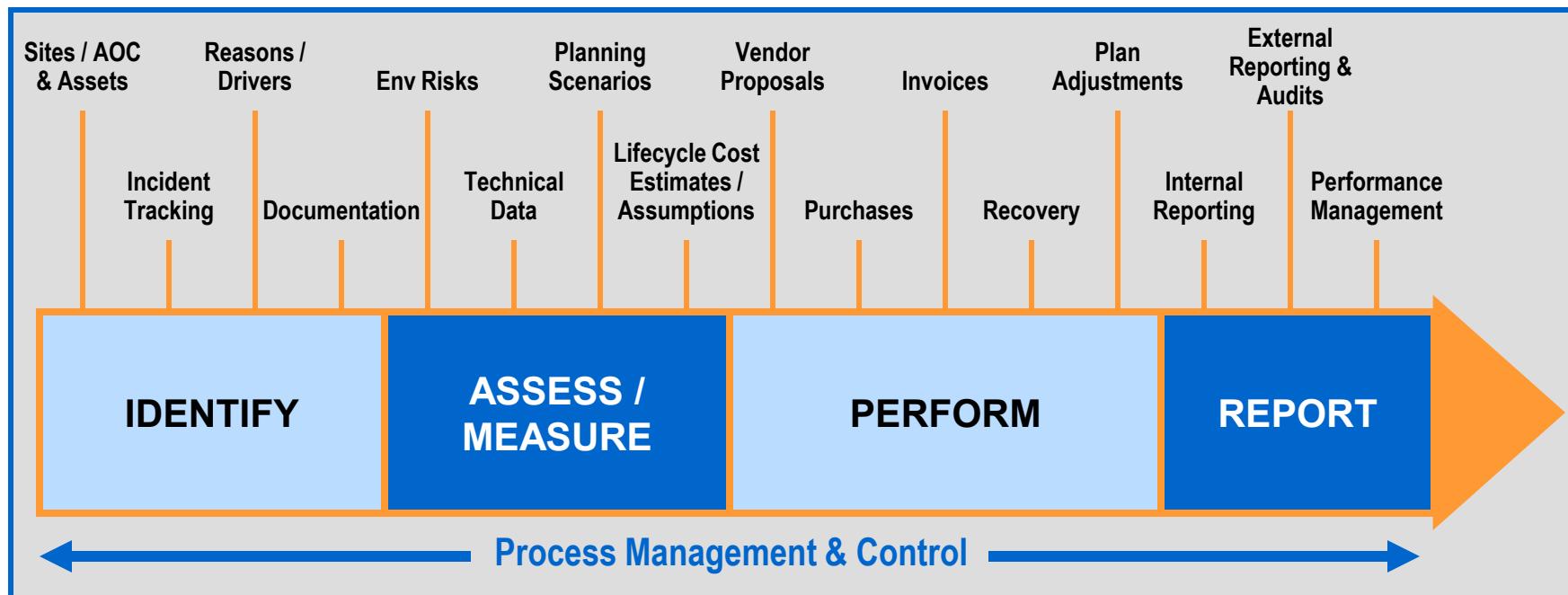
Finding: Cash use not efficient. For every dollar spent, Reserve is increasing by 33 cents.

$$R_e = (\$6 + \$4) - \$3 = \$7$$



# AVOID POINT SOLUTIONS FOR ENVIRONMENTAL MANAGEMENT PROCESSES

(FAS 5 / SOP 96-1, FAS 143 / FIN 47, SOX)





## Best Practices

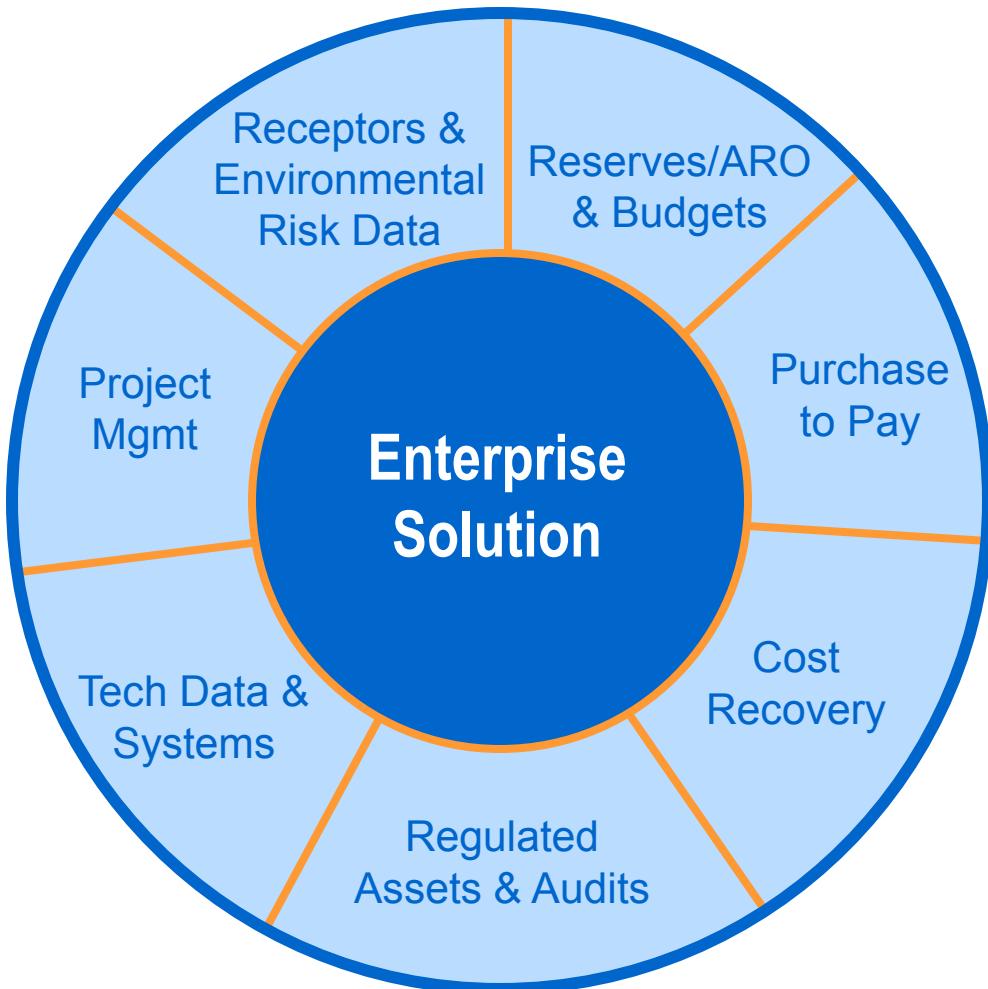


# EL BUSINESS PROCESS RE-ENGINEERING

- Support organizational structures / locations across complex organizational structures
- Sites / sampling data / regulatory documents
- Detailed break-down across (Projects / Proposals / Invoices)
- Cost Estimates / Environmental Liabilities
- Interface with a number of back-end accounting & legacy systems
- Interface with real property systems
- Real time decrementing of environmental liabilities.



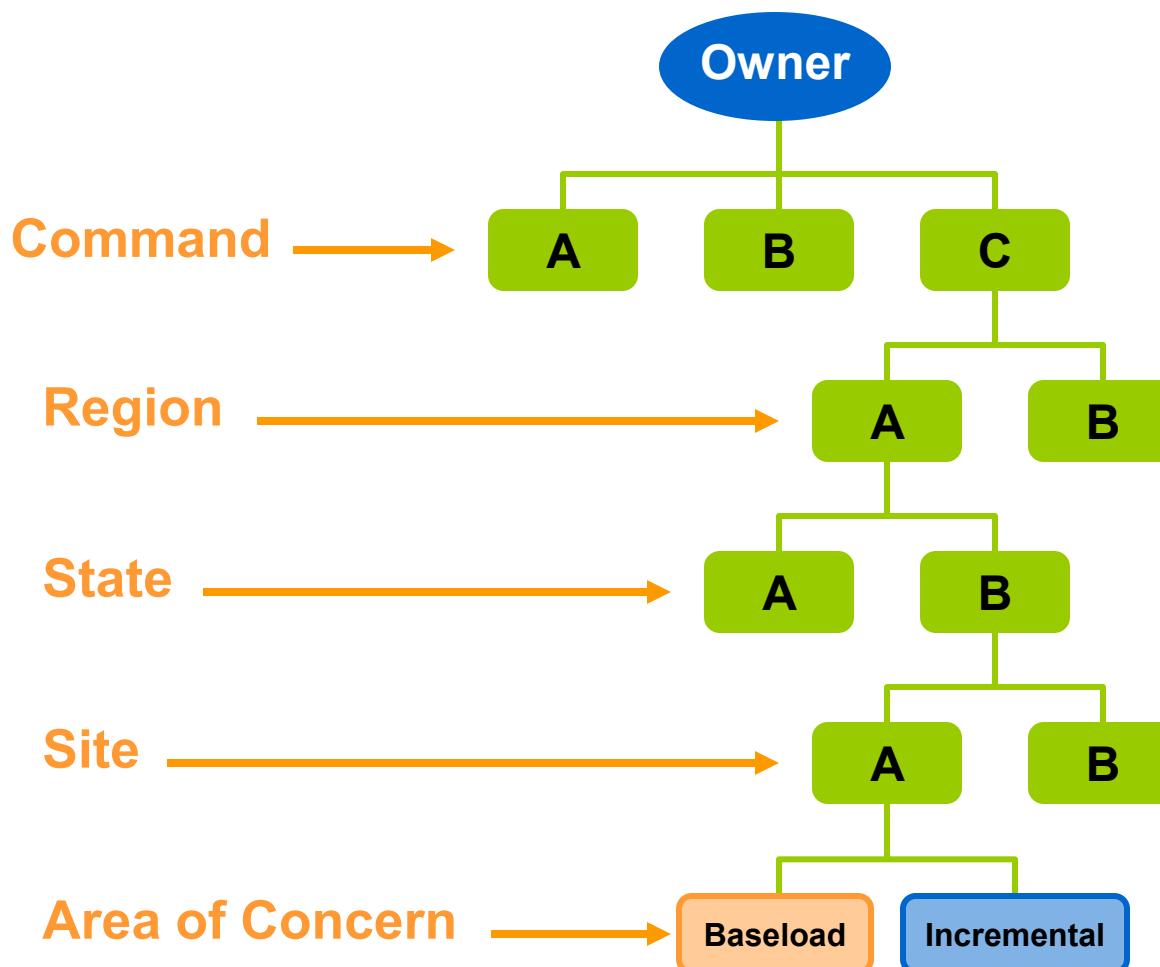
# COMPREHENSIVE MANAGEMENT PLATFORM



A single system supports the management of environmental, regulatory, & financial risks associated with remediation and decommissioning sites



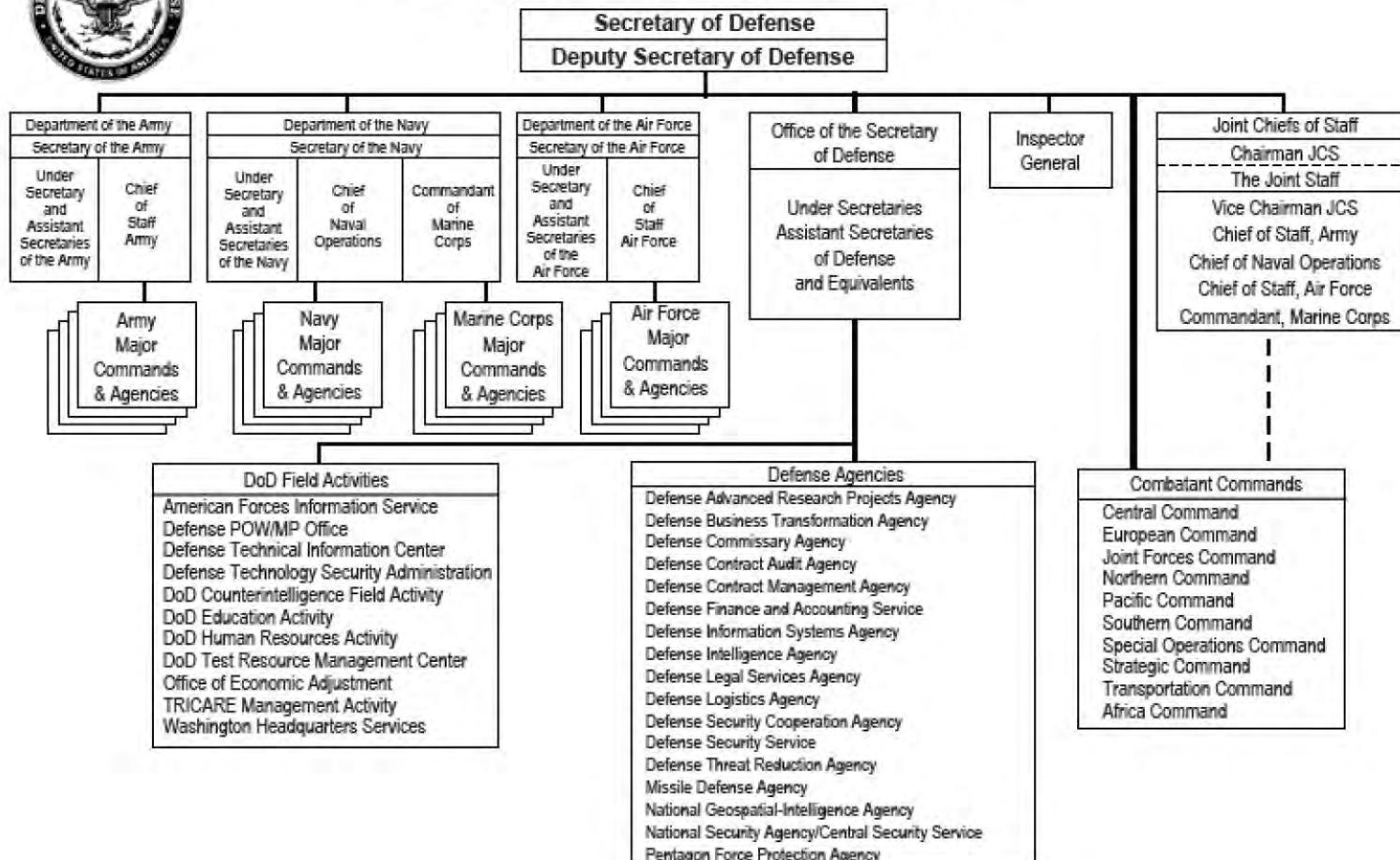
# COMPLEX ORGANIZATIONAL STRUCTURES



*Baseload / Incremental enables true performance measurement*

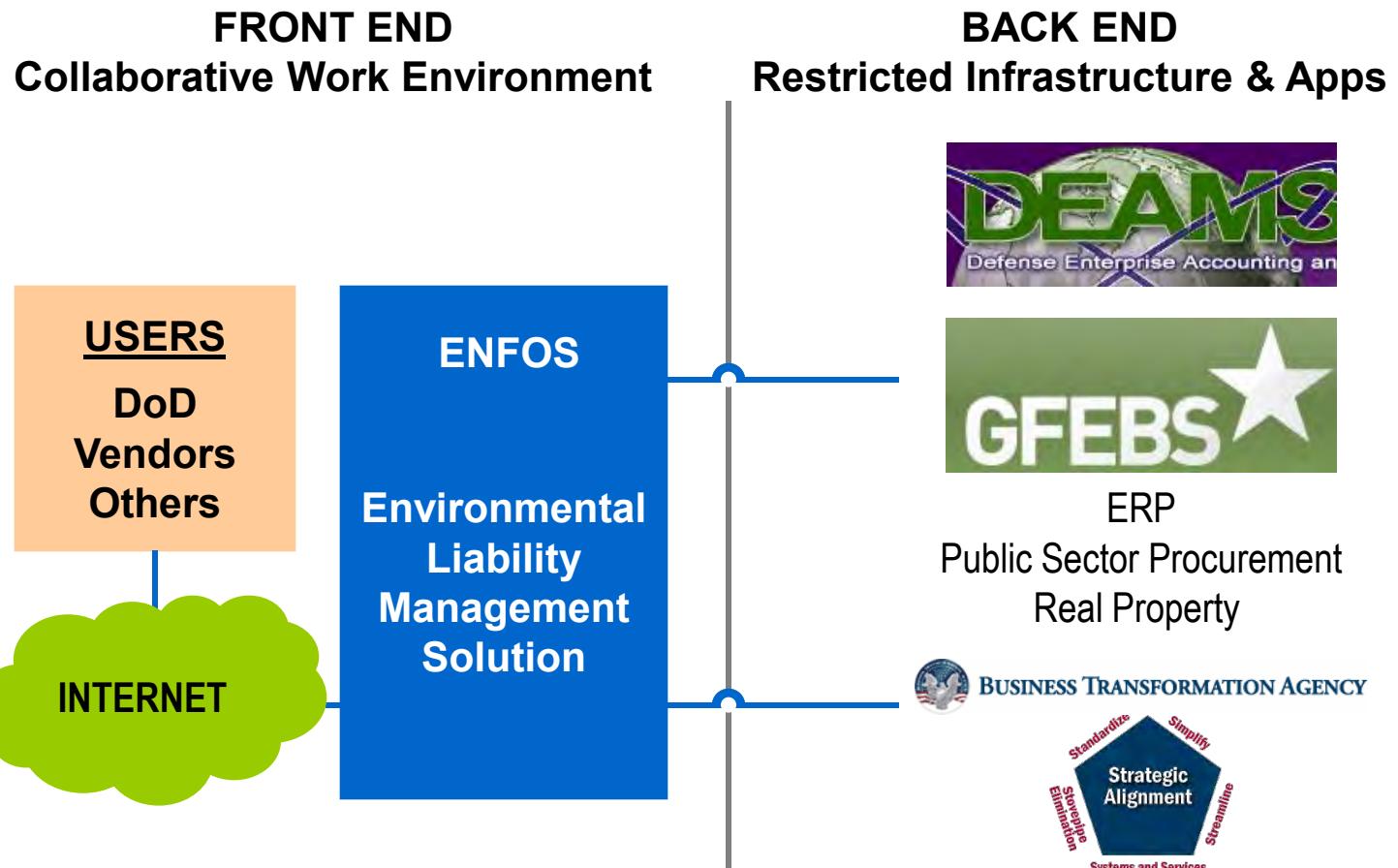


# Department of Defense





# ENTERPRISE SYSTEMS ARCHITECTURE





# EXAMPLE – FUNCTIONAL AREAS SUPPORTED BY USAF DEAMS

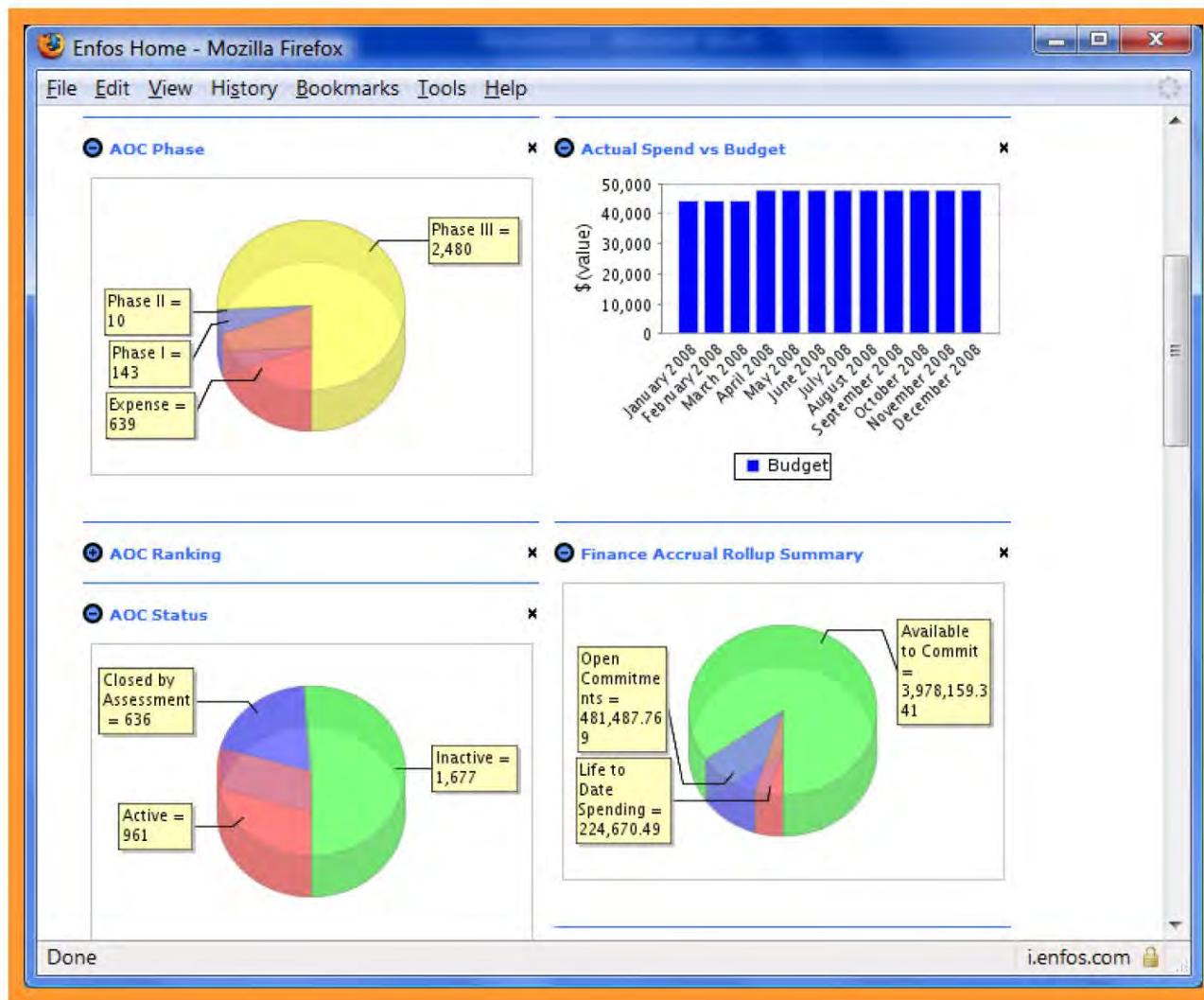
- Collections
- Obligations
- Cost Accounting
- Purchase Request
- Receipt and Acceptance
- Analysis and Decision Support
- Accounts Payable and Disbursement
- Customer Order and Customer Billing
- General Ledger, Budget Distribution, Control and Execution
- Property, Plant and Equipment (PP&E) -(USTRANSCOM only)



***No tools or methodologies for the tracking of EL with sufficient detail needed to perform the EL Mission***



# REAL-TIME PERFORMANCE MEASUREMENTS





# COMPLIANCE ACTIVITY PLANNING

Enfos Activity Planner - Mozilla Firefox

File Edit View History Bookmarks Tools Help

**ENFOS**

Home • Sign-Out • Company • Help • Site Map

Site Portfolio Data Finance Tools Compliance Admin

Community Activity Search Alerts Transfer

Roger Well : WestCo > USA > Retail > DC > 43844 > 43844.00

Company | Country | Program | State/Province | Site | AOC

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Activity Calendar for 43844.00

Calendar

«	December, 2008					»
Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Activities for December, 2008

Node	Date	Name	Activity Type	Status
...44 > 43844.00	12/31/2008	Facility Inspection	Compliance Audit	New
...44 > 43844.00	12/08/2008	NPDES Permit Renewal	Registration	New
...44 > 43844.00	12/19/2008	Tank Registration	Registration	New

---

Activity Planner

Add Download

showing 1-3 of 3

Name	Activity Target Date	Activity Type	Status	Copy	Check All <input type="checkbox"/>
+ Facility Inspection	12/31/2008	Compliance Audit	New	<a href="#">Copy</a>	<input type="checkbox"/>
+ NPDES Permit Renewal	12/08/2008	Registration	New	<a href="#">Copy</a>	<input type="checkbox"/>
+ Tank Registration	12/19/2008	Registration	New	<a href="#">Copy</a>	<input type="checkbox"/>

Done

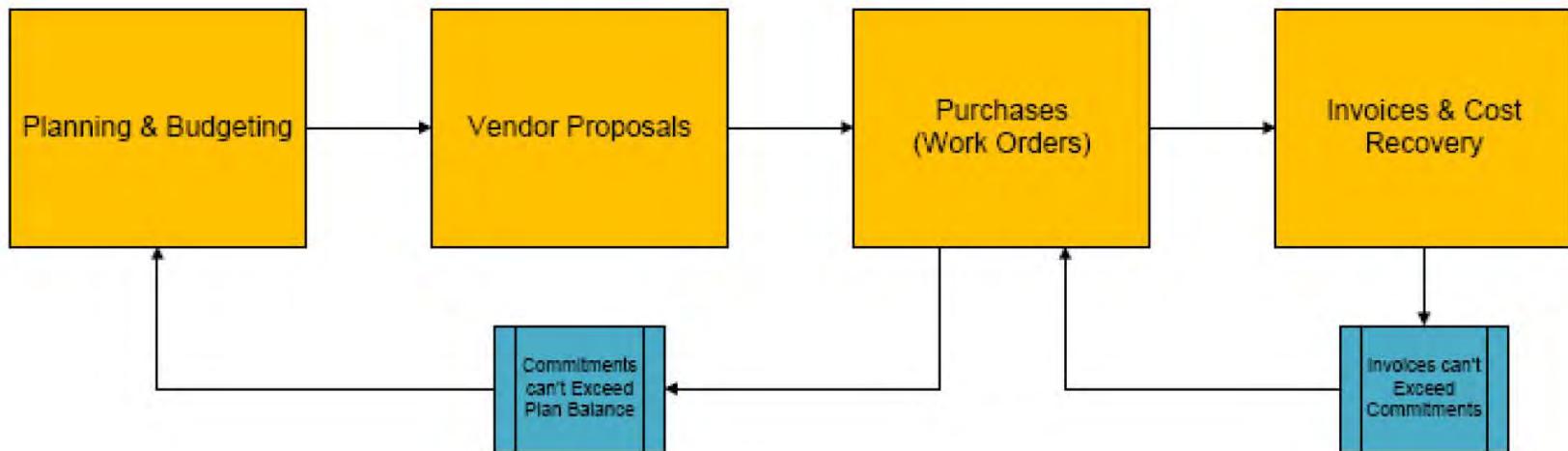
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# BUSINESS PROCESS IMPROVEMENT

## “Plan for Performance” Overview

Finance Workflow Summary



Work Breakdown Structure - Common Thread across all Transactions

Level 1 – “Phase”  
Level 2 (optional) – “Activity”  
Level 3 (optional) – “Element”  
Level 4 (optional) – “Component”

Can also easily integrate with systems like





# BUDGETS, WBS, ESTIMATES, ACTUALS

Enfos Planning - Mozilla Firefox

File Edit View History Bookmarks Tools Help

**Stage Gate**

1_Select - Define	Oct	2009
2_Define - Execute	Jan	2010
3_Execute - Operate	Dec	2013

**Site Milestones**

1_Field Char.	Oct	2009
2_Remedy Approved	Nov	2009
3_Remedy Imp.	Jun	2010
4_Remedy Operation	Sep	2012
5_Project Closure	Dec	2013

---

**Remediation Spend Plan [Operating Case Scenario]**

Add Row

View By Cost

Show  All  Current Year  Next Year  3 Year  Future

**Actions :** [Copy Previous Financial Plan](#)

Stage	Activity	Comments	Original Plan	Last Approved	Latest Estim	Variance	2009 Q1 Ac	2009 Actual	2009 Q1	Total
10 F 1_Appraise	Field Characteriza	Six wells	\$10,000.00	\$10,000.00	\$7,506.51	(\$2,493.49)	\$7,506.51	\$7,506.51	7506.51	\$7,506.51
20 F 2_Select	Feasibility Study	GW control	\$20,000.00	\$20,000.00	\$22,500.00	\$2,500.00			12500.00	\$22,500.00
30 F 3_Define	Monitoring	M&S	\$30,000.00	\$30,000.00	\$30,000.00	\$0.00				\$50,000.00
40 F 4_Execute	Construct/Install	P&T	\$20,000.00	\$20,000.00	\$20,000.00	\$0.00				\$60,000.00
50 F 5_Operate	Operations & Ma	O&M	\$0.00	\$0.00	\$0.00	\$0.00				\$30,000.00
	1		\$80,000.00	\$80,000.00	\$80,006.51	\$6.51	\$7,506.51	\$7,506.51	\$20,006.51	\$170,006.51

Select Action

Actual Spend Detail  Plan Spend Detail  Plan Spend Grand Total

Plan Spend Annual Total  Actual Spend Total

Done [w5.enfos.com](http://w5.enfos.com)



# REAL-TIME RESERVE BALANCES

Enfos Report - Mozilla Firefox

<https://i.enfos.com/enfos/portfolio/reportPopupUI.jsp?crypt=Sv9tc4u%2F35%2Fb96Qo6neEOsgfPf72N%2BY5vt9GwYYTToy7cV6DRiipA%3D%3D>

Roger Well

Print | Download | Template | Save to Favorites

**Financial Reserve Report Options**

**Portfolio** Portfolio for Parent : C2  
**Report** 96-1 2008 Report  
**Report** Show Financial Reserve report in currency USD for Project Type FAS5 SOP96-1 for period starting May 2008 and  
**Select State** All

Showing 1-20 of 232 »

Node Path	Site Name	Project Type	Starting Balance *	Adjustments *	Spend *	Accretion *	Corrections *	Final Balance *
...Program Management		FAS5 SOP96-1	USD4,413.73	(USD3,988.02)	USD225.71	-	-	USD200.00
...igation & Studies		FAS5 SOP96-1	USD1,200.00	-	-	-	-	USD1,200.00
...Settlement to Roan		FAS5 SOP96-1	USD70,000.00	-	-	-	-	USD70,000.00
...Program Management		FAS5 SOP96-1	USD171,249.34	USD37,734.03	USD4,821.37	-	-	USD204,162.00
...96-1 > Remediation		FAS5 SOP96-1	USD2,074,050.00	-	-	-	-	USD2,074,050.00
... 96-1 > Compliance		FAS5 SOP96-1	USD862,238.00	-	-	-	-	USD862,238.00
...Program Management		FAS5 SOP96-1	USD2,005.00	-	USD117.51	-	-	USD1,887.49
...Program Management		FAS5 SOP96-1	USD4,305.00	-	USD1,825.82	-	-	USD2,479.18
...actual Obligations		FAS5 SOP96-1	USD30,000.00	-	-	-	-	USD30,000.00

Done

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# LIFECYCLE REMEDIATION (FAS 5) SPEND PLAN

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File Edit View History Bookmarks Tools Help

Lifecycle Financial Details

FAS5 (Baseload) Spend Plan

Default Scenario

Graph Scenario Type Horizon Display By View

Accrual All Year Cost Only

By Year	2008 †	2009	2010	2011	2012	2013
<b>Assessment</b>	\$555.00	History	History	History	History	History
	\$1,882.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>Remedial Action Plan</b>	History	History	History	History	History	History
	\$67.12	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>System O&amp;M</b>	History	History	History	History	History	History
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>Emergency Abatement</b>	History	History	History	History	\$7,777.00	History
	\$324.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>Site Closure</b>	History	History	History	History	History	History
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>Sys Design &amp; Install</b>	\$60,998.00	-	-	-	-	\$888.00
	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Total \$77,872.00

† Denotes current fiscal year.  
□ Denotes Actual Spend Amount.

Phase Date

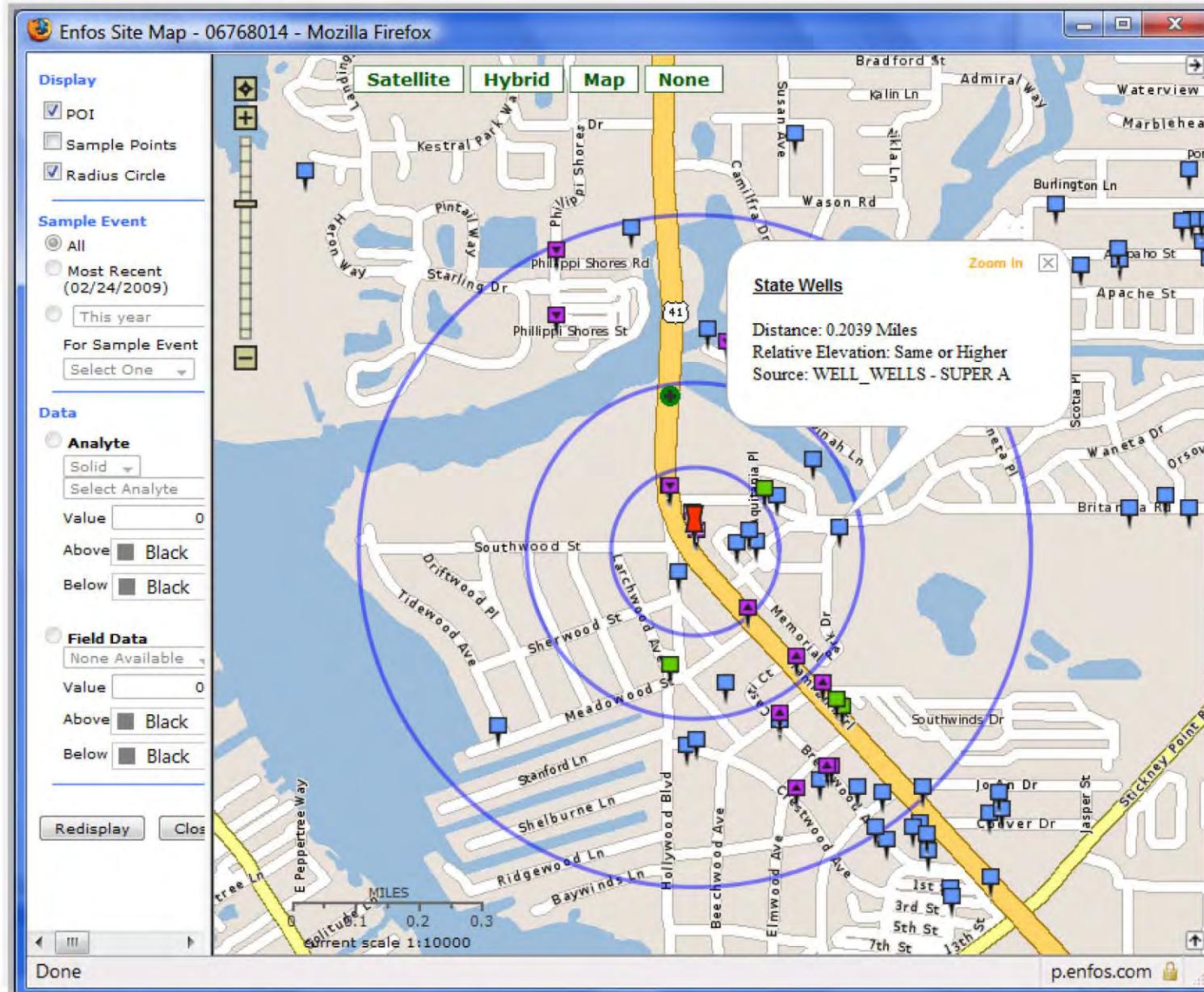
Phase	2009	2010	2011	2012	2013	2014	2015	2016
Assessment	■							
Sys Design & Install								■
Emergency Abatement				■				

Done

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# MANAGE RECEPTORS (EDR® CONTENT) GIS





# BEFORE

- MS Project & Excel files for planned costs
- Information transmitted through email
- No consolidated database of planned - actual costs
- Non-standard naming convention for remediation and ARO efforts
- Manual / non-standard calculations for net present value (NPV), accretion, and accrual adjustments > High Risk Spreadsheet controls required
- Evidence of Remediation and Finance approvals lack audit trail controls
- Time consuming reporting efforts
- No mid-period data available for analysis of forecast vs. actuals



# AFTER

- Common, central database of all planning and actual data
- Standardized naming conventions for all remediation and ARO efforts
- Eliminate effort associated with spreadsheets organizing, storing, and retrieving data
- Daily accrual calculation and standardized NPV and accretion calculations
- Online evidence of Remediation and Finance approvals
- Reduced cycle time during quarterly reviews
- Reduced effort to review, analyze, and query actuals and projections
- Enhanced reporting and analysis capabilities
- Immediate calculations of plan adjustments based on plan pre-approval



# QUESTIONS



Thank you for attending !



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